
ZXAppeal

Nov '85.

Newsletter of the

☛ 1.50

VANCOUVER SINCLAIR USERS GROUP

*
*
* **Next Meeting** *
*
* Killarny Community Centre *
* 6260 Killarny st. Vanc. *
*
* Nov 8 7 PM *
*
* At this meeting, *
* Soldering and soldersucking *
* by Bob Dennison *

In this issue:
We revisit the sieve.
We test for booze.
We 2068 with Bob and Guido.
And the ZX becomes musical.

ZXAppeal is a monthly newsletter put out by the Vancouver Sinclair Users Group. For more information on the club and ZXAppeal see the backcover. In order to 'beat the deadline' material for ZXAppeal may be send directly to the editor 2308 Marine Drive West Vancouver, B.C. V7V 1K8. Marcio Vieira 'the Pres.' can be reached at 984-8893



MY QL,s HERE!!!

EDITORS PREAMBLE

I'm telling you this year is fading fast. November.. December.. Halloween.. Christm... Oh well you know the routine. Anyway we all got together at our last get-together and we did stuff. Mr V opened at about 7.19 and told us right away that the dues will have to be increased, ah well we knew that didn't we there are costs involved in keeping even a small organization such as ours running. The figure bandied about was \$15.- which is really not to much considering. Oh by the way the membership fee for the community center turns out to be \$3.- so there are a few regulars who owe me a dollar, you're mavelous dallings an you know who you are. You owe me the dollar, by the way, because I somehow got dragooned into taking care of community center business.

Bob Dennison, Al Smith, Rod Humphreys and Ken Abramson are taking Karl Brown,s Robotics course at VVI and we have been promised a presentation of the wonders wrought sometime in the near future.

Peter Pollock, he of speed loader fame, tells us he is now making an honest living working for a company called Automatic Vision. They are developing a vision system, for use in robotics, completely in hardware. It turns out that looking at something in real time just cannot be programmed on an ordinary ZX81, no not even in FAST mode. Looking at something and interpreting it is something even supercomputers have trouble with which means that our own brain either uses parallel processing or the whole thing is programmed in, dare I say it, wetware. Yea I know, you to buddy.

Wilf Richter is still on top of his memory bank switching scheme. If, nay when, everything works and one installs the maximum memory allowed under this scheme one could find oneself with 256K of ones fave programs resident in ones computer how does that grab one?

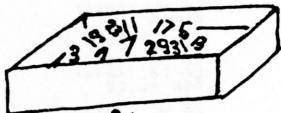
Oh by the way, at last count, according to Harvey the T, there were 160 QL,s in Canada. Give or take 60. A large concentration of these elusive machines is apparently to be found in the Okanagan which is a beautiful valley in the interior... Of B.C... You know.. Canada. Oh yeah well it so happens that I DO know the Capital of Lousiana. I've got "Capitals" for my ZX.

Anyway talks of restricting hunting in the Okanagan are apparently in progress at the highest levels, while Greenpeace is said to be organizing a boycott on the sale of QL hides, endangered species and all that. Harvey Taylor also tells us that he spied a text to speech system at the Tandy store, it involves an existing speech chip and a ROM with some clever text to speech algorithms in it. Harv would like to play with said T to S system and wants to know if anybody else is interested in which case he would be overjoyed if you would let him know.

Dave Ross has for sale some Jupiters, these are the Forth machines build on the same scale as the ZX81, which reminds me. There was this old forth and... What? This piece is already way over its silliness allotment OK I'll try and keep it straight from now on. As I said at the beginning, the year is fading fast, and so am I.

Cont. Page 6

ERASTOSHENES REVISITED



24

6
25 9 48 21
27 15 3

Cast your mind back to the April issue of ZXAppeal and remember. It was then that we introduced old Eratoshenes, and his sieve, to you. It had to do with finding prime numbers... ah now you remember. In the mean time Ken Kenny presented us with a program to confirm prime numbers and now Harvey Taylor goes all of us one better with a machine language prime sieve for the ZX81. Are we a prime bunch or what? PR

Playing with Electricity - H.Taylor

Since I got my QL, I have been curious just how it stacks up in terms of speed. In the back of the M68000 Programmer's Reference Manual there is a complete listing of the number of clock periods for each instruction. Because of the richness & variety of the 68K addressing modes, most of the variation is attributable to the addressing mode; not the instruction itself.

Well my cat was dead & only satisfaction would bring it back: so I ran a few benchmarks. If you do not know about the Sieve of Eratosthenes, you can read up on it in Byte Jan/83, page 283 & Aug/85, page 33. In short the program (see listing below), finds the prime numbers between 3 and 16387. There is a good description of how in the Aug. Byte.

So the results. For comparison I ran the program in the ZX81 too.

<u>MACHINE</u>	<u>LANGUAGE</u>	<u>TIME</u> (seconds)
ZX81	Basic (FAST)	448.
ZX81	Basic (Slow)	2852.
ZX81	Assembler (Fast)	1.3
ZX81	Assembler (Slow)	8.3
QL	Superbasic	276.
QL	Assembler	0.76
IBM3033	Assembler	0.0078

Cont next page

SIEVE OF ERATOSTHENES

ZX81 ASSEMBLER

```

START CALL MSG1
      CALL FAST
      LD HL,(4010) ; IARS
      LD DE,2001 ; IARS+1
      ADD HL,DE
      PUSH HL ; END OF ARRAY
      LD HL,(4004)
      AND HL,0
      LD BC,0080
      SBC HL,BC ; STK ROOM
      POP DE
      JP C NOMEMORY
      LD A,8A ; ITERATIONS
      LD(403E),A
ILOOP LD HL,(4010)
ALOOP LD DE,2000
      LD(HL),A
      INC HL
      DEC DE
      LD A,E
      OR D,E
      JR NZ ALOOP
      LD HL,2000
      LD(403C),HL ; CONTR
      LD HL,0000
      LD(4040),HL ; INDEX
      LD(4042),HL ; PRIME
      LD(4044),HL ; K
      LD(4046),HL ; COUNT
MLOOP LD HL,(4010)
      LD DE,(4040)
      ADD HL,DE
      XOR A
      CP(HL)
      JR Z NEXTI
      LD HL,(4040)
      ADD HL,DE
      INC HL
      INC HL ; PRIME=(2+I)+3
      LD(4042),HL
      ADD HL,DE
      LD(4044),HL ; K=I+PRIME
      LD BC,2000 ; 8K

10 REM SIEVE OF ERATOSTHENES
20 REM FOR ZX81-(64K)
30 PRINT AT 10,0;"STARTING NOW"

40 LET SIZE=8192
50 DIM A(SIZE+1)
60 FOR N=1 TO 8192
70 LET A(N)=1
80 NEXT N
90 LET COUNT=0
100 FOR I=0 TO SIZE
105 IF I=0 THEN GOTO 120
110 IF A(I)=0 THEN GOTO 190
120 LET PRIME=2*I+3
130 LET K=I+PRIME
140 IF K>SIZE THEN GOTO 180
150 LET A(K)=0
160 LET K=K+PRIME
170 GOTO 140
180 LET COUNT=COUNT+1
190 NEXT I
200 PRINT AT 11,0;"FINISHED","C
COUNT=";COUNT
210 STOP
220 SAVE "SIEVE"
230 LIST

```

```

WHILE LD HL,(4044)
      AND A
      SBC HL,BC
      JR NZ NEXIT
      LD HL,(4010)
      LD DE,(4044) ; K
      ADD HL,DE
      LD(HL),0
      LD HL,(4042) ; PRIME
      ADD HL,DE
      LD(4044),HL ; K=I+PRIME
      JR WHILE
NEXIT LD HL,(4046)
      INC HL
      LD(4046),HL
NEXTI LD HL,(4040)
      INC HL
      LD(4040),HL
      LD HL,(403C)
      DEC HL
      LD(403C),HL
      LD A,H
      OR A,H
      JR NZ MLOOP
      LD A,(403E)
      DEC A
      LD(403E),A ; NEXT
      JR NZ ALOOP ; ITERATION
      CALL MSG2
      CALL SLOW
      LD HL,(4046)
      PUSH HL
      LD A,HL
      CALL HEXPR
      POP HL
      LD A,L
      CALL HEXPR
      JP END
NOMEMORY RST 08
      05

SPRINT CALL PPROS
SPRLO POP HL
      LD A,(HL)
      INC HL
      PUSH HL
      CP FF
      RET Z
      RST 10
      JP SPRLO
PPOS LD HL,(400C)
      ADD HL,DE
      LD(400E),HL
      RET
HEXPR PUSH AF
      PUSH AF
      AND F0
      RRA
      RRA
      RRA
      ADD A,10
      RST 10
      POP AF
      AND 0F
      ADD A,10
      RST 10
      POP AF
      RET
MSG1 LD DE,0024
      CALL SPRINT
      "SIEVE OF ERATOSTHENES "
      RET
MSG2 LD DE,0066
      CALL SPRINT
      "DONE. COUNT=";FF
      RET
FAST CALL 0F23
      RET
SLOW CALL 0F2B
      RET
END NOP

```

WEST COAST COMPUTER FAIR 1985

by R. Lussier & R. Brown

I would like to acknowledge the following members of the group for helping with the 1985 West Coast Computer Fair: - Marcio Vieira, Guido Vieira, Ken Abramson, Rudy Ruggie, Al Wright and his son, Don Mumford, and Ken Kenny for supplying a couple of Microdrives. If I forgot anybody, please accept my appology.

The two day fair was a good success for the Group. We had on exhibit a few ZX81's, TS 1000's, TS 1500's, and a few TS 2068's, and a few Microdrives.

The last time we were represented at the fair was two years ago. Many people were very surprised to see how much advancement there was in the Timex/Sinclair line of computers. Many of the people stated they thought us as an extinct computer but were surprised and happy to see us doing quite well.

All in all the fair went very well and we were happy to let people know that were still around. Long live the Timex/Sinclair computers.

Lets hope that next year we will again be an exhibitor with the Fair, and that all the computers in our line will be represented. Hint, hint.

.....

The following interesting short program for the SPECTRUM might be suitable for the newsletter.

n.b. The Printer must be OFF

```
10 CLS: FOR I= 64 TO 87
20 POKE 23681,I
30 LPRINT " VANCOUVER Sinclair Group"
40 NEXT I
50 PAUSE 0
```

I don't know why it works!

Anon.!

WEST COAST FAIR PRODUCT REPORT

There was a product at the Fair which caught my eye. This was a Smoked Plastic Keyboard Cover. Some of the features are:

- (1) Can be used under the computer, monitor, printer, etc. as an angled riser.
- (2) Manufactured with a special additive that cannot build-up static electricity, a potential threat to sensitive circuits.
- (3) Prevents keyboard tampering.
- (4) Easy-tilt hinges and four mar resistant rubber feet.

This unit just fits perfectly on the TS/TC 2068 computer. The model No. is FP884H and the price is CAN. \$10.95+tax in B.C. For mail-orders include the postage. This great item is from

Computer Supply,
1804 W. Broadway,
Vancouver, B.C.
V6J 1Y9

I just bought one for my new Portugal TC 2068 and it does look good, just adds that extra touch for looks and protection. So long for now.

I have numerous Hints, Tips
 Pokes, Maps & solutions (from
 various magazines) to make it
 easier to play the SPECTRUM
 games listed below (over 100).

If anyone would like any
 information please call
 * Bill Rutter 434 8357 *

Ah Diddums	-Alien 8
Android	-Android 2
Arcadia	-Astro Blaster
Atic Atac	-Avalon
Backpackers Guide	-Bored of Rings
Boulderdash	-Cavelon
Chiller	-Chuckie Egg
Classic Adventure	-Colossal Adv.
Cookie	-Crypt
Defenda	-Doomdarks Rev
Dragonlord of Avalon	-Eskimo Eddie
Eric the Viking	-Eureka
Everyones a Wally	-Fall Guy
Eye of Bain	-FindersKeepers
Fantasia Diamond	-Fred
Frankenstein	-Funhouse
Freeze Bees	-Giants Revenge
Ghostbusters	-Gissakiss
Gilligans gold	-Gyron
Ground Attack	-Hobbitt
Horace & the Spiders	-Horace Goes Skiing
House that Jack Built	-Hunchback
Hunchback	-Jack & Beanstalk
Jet Set Willy	-Ket Trilogy
Knight Lore	-Knights Quest
Kokotoni Wilr	-Kosmic Kanga
Lords of Midnight	-Lazy Jones
Lords of Time	-Lunar Jetman
Manic Miner	-Maze Death Race
Monty is Innocent	-Monty Mole
Moon Alert	-Mordons Quest
Mr. Wimpy	-Mugsy
Mutant Monty	-Orbiter
Pharaohs Tomb	-Piballad
Pi-in-ere	-Project Future
Project X (Microman)	-Pssst
Pyjama	-Psytron
Quest	-Pyramid
Sabrewulf	-Red Moon
Sherlock	-Scuba Dive
Sky Ranger	-Sir Lancelot
Snowball	-Smugglers Cove
Spectacle	-Son of Blagger
System 1500	-Stop Express
TirNaNog	-Technician Ted
Trans Am	-TornadoLowLevel
Underwurld	-Tutankhamun
Wheatie	-Valkyrie
Wizards Lair	-Wild West Hero
Zip Zap	-Zaxxon
Zzoom	-Zombie-Zombie

From Page 2

Arbie Fru, the trash, came in to
 tell us that we are getting, ahem
 low on dough.

I am sorry.
 Isn't it a coincidence though, I
 mean here we are told by mr V
 that the dues must be raised just
 as Arbie tells us he needs more
 money. Isn't it great how
 everything in nature always
 balances out.

I have been promised by Bob
 Dennison that he will do a solder
 and solder suck demonstration for
 us at the November meeting. I
 happen to know that Bob has
 worked years at his solder
 sucking skills. You see he has
 this specially developed asbestos
 tongue sock and...? What, you
 don't believe it, so come to the
 meeting already.

Paul (the Editor) Ruiterman.



SINCLAIR TAKEOVER by R. Lussier

The Sinclair takeover by Robert Maxwell did not go over as planned.

Robert Maxwell backed out of the deal. But all is not lost as Dixon's which is a huge concern in Britain has bought up a £20 million worth of Sinclair's products such as the Spectrum +, and the QL's.

With this deal, Sir Clive gets to keep his 85% of Sinclair Research and rumours from close Sinclair sources are that some new products are on the way in the near future. Such items as a 128K Spectrum computer possibly with a built-in Microdrive or a Disc Drive, and possibly a new portable computer with built-in flat screen T.V. or monitor that would be compatible with the QL & Spectrum plus.

With the onslaught of the Amstrad 128K computer with built in Disk and Monitor at £399, the price of the QL alone Sinclair will have to do something soon & it had better be good. If this is not the case then Sinclair is in deep troubles.

The Amstrad 128K computer even has the big guns like BBC & Commodore worried. The Amstrad computer has been very well received by the software houses & that's where the power is. If a computer has a good software base they will sell well, usually. And so far by what I see of the software industry in Britain the Amstrad is catching up to the Sinclair products in popularity very fast.

I will try and keep you all informed on the progress of the Sinclair saga. Lets hope Uncle Sir Clive will not let his faithful followers down.



```

1 REM BLOOD-ALCOHOL TESTER
  ADAPTED BY PEN ABRAMSON
10 CLS
20 PRINT AT 9,6;"BLOOD-ALCOHOL
TESTER"
30 PRINT TAB 6;"XXXXXXXXXXXXXXXXXXXX"
40 FOR N=1 TO 50
50 NEXT N
60 CLS
70 PRINT AT 5,0;"PERCENT ALCOH
OL IN DRINK? ";
80 INPUT PC
90 PRINT PC
100 PRINT AT 7,0;"OUNCES OF BOO
ZE GUZZLED? ";
110 INPUT OZ
120 PRINT OZ
130 PRINT AT 9,0;"WHAT IS YOUR
WEIGHT (LBS)? ";
140 INPUT WT
150 PRINT WT
160 LET BL=INT (((OZ*PC*.074)/
WT)*100)+.5)/100
170 PRINT AT 11,0;"BLOOD-ALCOHO
L = ";BL;" PERCENT."
180 PRINT "LEGAL LIMIT IN B.C.
= 0.08 PCT."
190 IF BL>.08 THEN GOTO 230
200 PRINT AT 15,0;"SO FAR, YOU
ARE SAFE."
210 PRINT
220 STOP
230 FOR N=1 TO 15
240 PRINT AT 15,0;"YOU ARE AN I
MPAIRED, DRUNKEN SOT"
250 PRINT AT 15,0;"YOU ARE AN I
MPAIRED, DRUNKEN SOT"
260 PRINT AT 17,2;"*****DO N
OT DRIVE*****"
270 PRINT AT 17,2;"*****DO N
OT DRIVE*****"
280 NEXT N

```

SOUND (again?!)
by Guido Vieira

Since my last article I had the good fortune of purchasing a Spectrum ROM from England. As soon as it arrived Mr v and I got to work on a ROM Switch of our own. It's still being worked on. Anyway while this was being done I decided to switch ROMs. With the new Spectrum ROM I discovered several things:

- 1) When I first got the ROM I had no software for it, so I decided to try some 2068 programs. To my surprise (surprise! surprise!) it loaded perfectly! (WOW!) It also ran perfectly! I'm talking about the sound and joystick too. This was only true with the machine code programs such as Penetrator or Time Gate (2068 version).
- 2) Upon this discovery I decided to find out why this happened and discovered first how to operate the sound chip from the Spectrum ROM and then later how to use the joystick.

Before I go into the actual program I shall tell you how this is done:

First you have to realize that the 2068 has a sound chip and that this sound chip also has a single bit I/O "Port". It is through this port that the joystick port is connected. The only way to instruct the chip from the Spectrum ROM is by the OUT command. The OUT address for the chip is 245 for the register and 246 for the value. Now I'm not going to explain what the 2068 Manual says about the chip and how to program it, but I will tell you how to use those numbers up above.

Note: read the 2068 Manual on sound if you don't know how to use the sound command

The instruction OUT 245 will program the sound chip with the register you want. EX OUT 245,7 will give the chip the instruction to activate register #7. OUT 246 will load the register with the desired value. EX OUT 246,56.

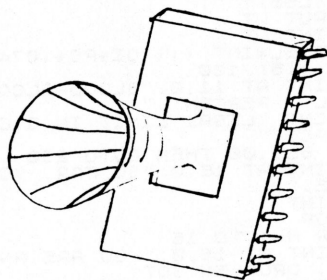
The above OUT's (OUT 245,7:OUT 246,56) are the equivalent of the command SOUND 7,56. The following program might clarify things better if you experiment a bit:

```
10 INPUT "REGISTER";r:INPUT "VAL  
UE";v  
20 OUT 245,r:OUT 246,v:GO TO 10
```

Or try this:

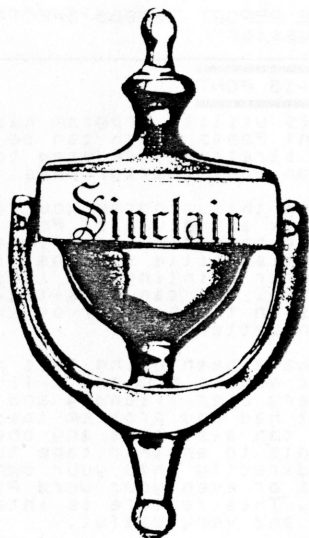
```
10 OUT 245,7:OUT 246,56  
20 OUT 245,8:OUT 246,15  
30 OUT 245,9:OUT 246,15  
40 OUT 245,10:OUT 246,15  
50 FOR a=1 TO 255:OUT 245,0:OU  
T 246,a:OUT 245,2:OUT 246,a-10:O  
UT 245,4:OUT 246,a-15:NEXT a
```

Next time we'll talk about the joystick port.



The 5131s integrated sound chip.

by R. Lussier



There are now quite a few American companies that are now carrying Spectrum programs that are converted for the unaided TS 2066 & also Spectrum programs using the Emulator or Romswitch.

With the cost of the Pound being quite high, now at \$2.06 Canadian and the fact that the American companies have lowered their Software prices, things are looking good Stateside. Most of the prices are now comparable with Britain.

Some of the good concerns in the U.S. are:-

- (1) Sunset Electronics
- (2) Curry Computers
- (3) Games To Learn By
- (4) The English Micro Connection
- (5) WMJ Data Systems
- (6) T.S. Services

There are others but room in this article is short. If you require an address or two please write to the Group's Post Box.

SINCLAIR Magazines *****

The latest Sinclair magazine to bite the dust these past few months is the "SINCLAIR PROGRAMS" magazine. A couple others have also died on the vine. One of these was the "Home Computing Weekly" which had quite a bit of Sinclair related articles, and another was the "Personal Computer Games" magazine. Since the new computer called the AMSTRAD has come on the market, many of the magazines are carrying many articles and listings for it and slowly dropping the Sinclair as their favorite machine. Also the Software houses are now moving towards the Amstrad and the old Sinclair machines are now starting to lose ground here also. Does not sound to healthy for our machine. Sinclair Research had better start putting out a lot better product or it will be left behind. It is already on the way down, eg-The low sales by Sinclair in the last year.



ZX! BASIC & ZX! SPRITES Review

by R. Lussier

These programs are both of the utility type. In the 1st-ZX! Basic, this utility is very good and a very powerful extension of Spectrum Basic. It allows all of the Spectrum Basic to be used but also adds 28 NEW or improved commands. Several of these new commands can be subdivided & gives a total of 48 New instructions. A very powerful utility.

The 2nd, ZX! Sprites, is a very excellent and Fast utility. Some of the new commands are:- Erase, Format, Move, New Print, 64 Column printing, Window move, Trace, Box, Animate, etc.

Both of these programs are very well done and if this is an area which you enjoy, you can obtain them from:-

Stuart Nicholls,
82, Lays Drive,
Keynsham,
Bristol BS18 2LE,
England

PRICE: £4.50 inc Post
MONEY VALUE: 85%
EASE of USE: 90%
GRAPHICS: Sprite Demo
USE: If you are into this type of utility, Very good.
DELIVERY: Just over 2 weeks

This author also has 2 new books:- "Assembly Language for Arcade Games & Other Fast Programs"

"The Spectrum Graphics Machine"

NOTE!! The above author in his letter has stated that the price of the QL has dropped from £399 to £199

Also the NEW 128K Spectrum is available and a new updated QL is soon to be released that will run Digital Research's GEM operating system. This is good news.

Thanks to Mr. Nicholl for the above information.

SOFTWARE REPORT-TS2058/SPECTRUM
by R. Lussier

LETASET-18 FONTS

This utility program has 18 different Fonts which can be compacted, stretched, reduced to a 64 column Font, Backgrounds, etc

With this program you can freely mix any style of Font to any scale on screen or printer. Make stylish title screens, it has clearer printing for less eye strain. You can make tickets vouchers on the printer or even your own Letterheads.

I have been using this program for awhile now and I find it is very user friendly and I have not had any problem loading it. You can also save any one or more Fonts to another tape to be loaded directly into your own programs or even your Word Processors. This feature is interesting and very useful.

Money Value ----- 95%
Usefulness ----- 90%
Originality ----- 98%
Use of Computer -- 95%
Overall ----- 94%

The price is £5.50 inc postage and available from:-

Eclipse Software,
79 Ardrossan Gdns.,
Worcester Park,
Surrey KT4 7AX,
England

PEN PALS by R. Lussier

This is another section on the Pen Pals around the world interested in contacting Users who use Spectrum programs and Spectrum compatible machines.

Norway ZX Users Group,
Box 874,
3001 Drammen, Norway

M.P. de Bruyn,
27 Ridge Road,
Park Town,
2193 Johannesburg,
S. Africa

Edip Uras,
Muhurdar Cad No.91/4,
Kadikoy,
Istanbul, Turkey

Aribert Deckers,
Postfach 957,
D-7000 Stittgart 1,
W. Germany

Thomas Christian,
c/o Wissenschaft Forscht,
Postfach 141,
A-1190 Vienna, Austria

Michael Hunin,
6 Blvd. Leopold III,
Bte. 15,
B1030 Brussels, Belgium

Anis H. Millwalla,
c/o Indian Register of
Shipping,
72 Maker Towers "F",
Cuffe Parade,
Bombay 400 005, India



I didn't know!



```
*****
*
*   DID YOU KNOW? for 2058
*
*****
By R. Lussier
```

Do you know that you can send Print commands to a printer with out using LPRINT?

You can---by using the OPEN command.

Route all the screen output to a printer by: OPEN 2,"p" all PRINT goes to the printer. CLOSE 2--all print returns to the screen.

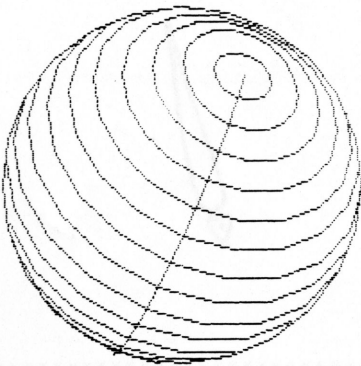
Do you know that you can PRINT on the bottom two (2) lines of the screen almost as easily as you can the top 22? You can--- using the PRINT #0; AT 0,0 ... command. NOTE: AT 0,0 is the upper line and AT 1,0 is the lower line.

Do you know that you can Print elapsed time (like a stop watch) in seconds? You can. Define the following function:

```
DEF A()= INT((PEEK 23674+65535+
PEEK 23673+256+PEEK
23672)/60)
```

Elapsed time is the difference in FN A() between any two sample points.

Thanks to Lemke Software in Wichita, KS for the information.



```

1  REM For the T/S 2068
15  REM XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
15  REM XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
19  REM CAR 31999
20  REM Phi=forward rotation
25  REM Psi=side rotation
30  REM Std=step for Latitude
35  REM Sta=step for Longitude
37  REM Sc=Plot scale factor
40  LET psi=-30: LET phi=45
50  LET std=10: LET sta=20
60  LET sc=100: LET dtr=PI/180
70  LET ch=COS (phi*dtr)
80  LET sh=SIN (phi*dtr)
90  LET cs=COS (psi*dtr)
100  LET ss=SIN (psi*dtr)
110  LET a21=ss*sh: LET a23=-ss*
Ch
120  LET a31=-cs*sh: LET a33=cs*
Ch
122  LET zz=32000
125  FOR m=0 TO 3
130  FOR d=90 TO -90 STEP -std
135  LET p=0
140  LET dr=d*dtr: LET cd=COS dr
: LET sd=SIN dr
145  FOR a=0+m*sta/4 TO 360+m*st
a/4 STEP sta
150  LET ar=a*dtr: LET sa=SIN ar
: LET ca=COS ar
155  LET x0=cd*ca: LET y0=cd*sa
160  LET x=ch*x0+sh*sd
165  IF x<0 THEN LET p=0: GO TO
200
175  LET y=a21*x0+ca*y0+a23*sd
180  LET z=a31*x0+ss*y0+a33*sd
182  LET yp=128+y*sc: LET zp=88+
z*sc/1.22
190  IF p THEN DRAW yp-y1,zp-z1:
LET y1=yp: LET z1=zp
195  IF p=0 THEN PLOT yp,zp: LET
y1=yp: LET z1=zp: LET p=1

```

```

200 NEXT a
210 NEXT d
280 LET dr=d+dtr: LET cd=COS dr
: LET sd=SIN dr
290 FOR a=0+m*sta/4 TO 360+m*st
a/4 STEP sta
300 LET ar=a*dtr: LET sa=SIN ar
: LET ca=COS ar
301 LET p=0
302 FOR d=90 TO -90 STEP -std
305 LET dr=d+dtr: LET cd=COS dr
: LET sd=SIN dr
310 LET x0=cd*ca: LET y0=cd*sa
320 LET x=ch*x0+sh*sd
330 IF x<0 THEN LET p=0: GO TO
390
340 LET y=a21*x0+ca*y0+a23*sd
350 LET z=a31*x0+ss*y0+a33*sd
360 LET yp=128+y*sc: LET zp=88+
z*sc/1.22
370 IF p THEN DRAW yp-y1,zp-z1:
LET y1=yp: LET z1=zp
380 IF p=0 THEN PLOT yp,zp: LET
y1=yp: LET z1=zp: LET p=1
390 NEXT a
400 NEXT d
405 REM XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
407 LET first=0
410 FOR i=0 TO 360 STEP 15
415 LET ang=i*dtr
420 IF first=0 THEN LET q1=COS
ang: LET q2=SIN ang: PLOT 128+sc
*q1,88+sc/1.22+q2: LET first=1
425 LET r1=COS ang: LET r2=SIN
ang: DRAW sc*(r1-q1),sc/1.22*(r2
-q2): LET q1=r1: LET q2=r2
430 NEXT i
500 GO SUB 700
510 LET zz=zz+7000
520 CLS
530 NEXT m
540 GO TO 800
700 RESTORE 710: FOR n=64000 TO
64011: READ a: POKE n,a: NEXT n
: RANDOMIZE USR 64000
710 DATA 33,0,64,17,zz-INT (zz/
256)*256,INT (zz/256),1,0,24,237
,176,201
720 RETURN

```

The QL Report - by R. Lussier

Sinclair has finally decided that they will now have new Authorized dealers selling the QL computer. The 1st authorized dealer appointed by Nigel Searle of Sinclair is the English Micro Connection, 15 Kilburn Court, Newport, RI 02840, U.S.A.

The computer will sell for *** US \$499.00 ***. This will include a Serial to Centronics converter, a Touch & Go Typing Tutor, & a new Home Finance type package. A total of \$175.00 in Canadian funds or US \$125.00 of Freebies. A good deal.

If you are interested in a catalog, don't hesitate to write and ask for one. By all reports from Britain the price of the QL and other Sinclair products will be reduced fairly soon. The Spectrum Plus is to be reduced from £129 to £99 and similar savings on other Sinclair products. So look for some good deals in the near future.

CANADIAN TIMEX/SINCLAIR DISTRIBUTORS

by R. Lussier

The QL Computer, please contact the following for information:-

EDG Electronics,
3950 Chesswood Dr.,
Downsview, Ont.
M3J 2W5

2068 & SPECTRUM software

For catalogue please contact:-

Earl McGhee,
Suite 557-21,
10405 Jasper Ave.,
Edmonton, Alta

ZX81, TS1000, & TS2068 Disk Drive
Controller Card. Ask for details
and Price.

Larken Electronics,
RR #2,
Navan, Ontario
K4B 1H9

Many ZX81, TS1000, & TS1500 prod.
such as Ram packs, Speech packs,
Keyboards, etc. Write for their
catalogue.

ZX81/TS1000 Offer,
Moorshead Publications,
25 Overlea Blvd.,
Suite 601,
Toronto, Ontario
M4H 1B1

TS1000's for \$29.95, Timex 2040
Printers for \$49.95, Software @
\$2.50 + up.

For information to the above:-

Orion Electronics,
40 Lancaster St. West,
Kitchener, Ontario
N2H 4S9

```
800 CLEAR 31999
803 LET zz=32000
805 FOR f=0 TO 33 STEP 11
810 RESTORE 820: FOR n=64000+f
TO 64010+f: READ q: POKE n,q: NE
XT n
820 DATA 33,zz-INT (zz/256)*256
,INT (zz/256),17,0,64,1,0,24,237
,176
830 LET zz=zz+7000
840 NEXT f
850 POKE 64044,201
900 IF INKEY$="" THEN RANDOMIZE
USR 64000
910 IF INKEY$<>"" THEN GO TO 91
0
920 GO TO 900
950 SAVE "qlbtrn"
960 SAVE "qlbfrn"CODE 32000,280
00
```

PRESENTING TADA!!

BEETHOVEN

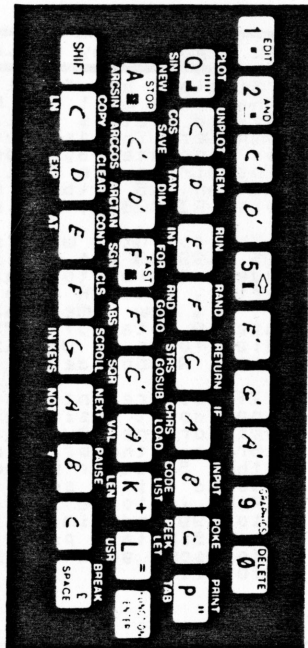
Or rather, the opportunity for you to behave like him on your ZX81. Yes indeed I have the privilege to present to you a devilishly clever little program which turns your ZX81 into an acceptable organ, an organ by the way which can be tuned by you. I do not know where I got this program from, I found it among my stack of machine language listings copied from a book or a magazine.

As you can see I have adapted the program in such a way that the BASIC,s among you can play along with the best of them.

In order for you to turn your ZX into an organ just enter the BASIC program as you see it and RUN it. Just make sure you reserve at least 80 bytes in the number one REM statement before you RUN, after you RUN the program once the REM statement should look as in the listing. The layout of the keyboard mimics that of a real keyed instrument, you have two octaves to play with, the letters with the "Q" beside it represent the black keys on your piano.

The music will come out of the speaker of your TV, You might have to tune your TV a bit. If you use a monitor or are looking for a better quality sound the signal is also available at your "mic" port, after all it is the "LOAD" routine that we are messing around with here, to make sound, in the first place.

In order to tune the individual notes you can change the values in the A\$ at line 100, these values are ofcourse in hex and you can see in the accompanying table what key corresponds to what value. In order to increase the frequency of a note you must decrease the value in A\$. To get out of the program after your composing session press Shift 1. You all have fun now.



```

1 REM "???" "C8 0G ?-2 *E",
INKEY$? SUT??X4 CLEAR TAN LN
"???"=0 RUN Y UNPLOT "COS LN X"
RND;?C SCROLL (= COPY LN RND
PEEK COPY LN RND/=<=.....
5 FAST
10 CLEAR
30 LET I=16514
40 GOTO 100
50 FOR N=1 TO LEN A$ STEP 2
60 POKE I, (CODE A$(N)-28)*16+C
ODE A$(N+1)-28
70 LET I=I+1
80 NEXT N
90 RETURN
100 LET A$="0889736900937E005E0
03B3128240000362C0000000F161E000
A0C121A000000414C00383C4653"
110 GOSUB 50
120 LET A$="783D20FDC9CDBB02444
D511428F73EFCBCC8CDBD07110440194
6AFB828E7DBFFCDA940D3FFCDA94018D
E"
130 GOSUB 50
200 RAND USR 16558
9999 STOP

```

```

40A9 78 LD A,B
40AA 3D DEC A
40AB 2D JR NZ,40AA
40AC 9D RET
40AD 9D CALL 02BB
40AE 44 LD B,H
40B1 40 LD C,L
40B2 51 LD D,C
40B3 14 INC D
40B4 28 JR Z,40AE
40B5 3E FC LD A,FC
40B6 BC CP H
40B7 08 RET Z
40B8 0D BD 07 CALL 07BD
40BE 11 04 40 LD DE,4004
40C1 19 ADD HL,DE
40C2 86 B,(HL) LD B,(HL)
40C3 87 XOR A B
40C4 00 CP B
40C5 28 JR Z,40AE
40C7 00 IN A,(FF)
40C8 00 CALL 40A9
40C9 00 OUT (FF),A
40CE 00 CALL 40A9
40D1 18 DB 40 JR 40AE

```

THE WORKS.

For those of you 'into it' here comes the explanation of 'the works'.

At 40A9 we find a delayloop which is called from 40C9 and again from 40CE. The length of the delay depends on what is in 'B' which in turns depends on what key the player is pressing. Yes it is possible to use a DJNZ but it will screw up the timing.

40AE is our entry point. We start with a ROMcall which scans the keyboard, we load the result of the scan into 'BC' and check if a key was actually pressed. Let me backup a little here, note that we load 'L' into 'C' and then 'C' into 'D' we then increment 'D' and rescan the keyboard if the result of the increment was 00. It turns out that if no key was pressed during the keyscan 'L' would have held FF and since incrementing FF turns into 00 you can see what the game is here.

If a key was pressed we check 'H' to see if it holds FC, if it does a shifted l (or some other shifted key) was detected and we jump out of the program via the RET Z.

If all is well we use an other ROMcall which upon return will have loaded 'HL' with an address. This address points at the correct keycode in the keytable in ROM.

However we are not interested in the keycode, we have our own table of values. By adding 4004 (held in 'DE') to 'HL' we end up with an address right in our own value table which starts at 4082.

We now load the value 'HL' points at into 'B' and check that it is not 0 (if it is we return to 40AE). With the correct value in 'B' we now instruct the SLC to output signals on the TV/Cassette port for the duration of 'B' and voila, joyful sounds.

And that is how its done.

Paul R

AS (line 100)	KEY	NOTE	OCTAVE
9B	Z	C	LOW
89	X	D	L
73	C	E	L
69	V	F	L
00	A	-	-
93	S	C'	L
7E	D	D'	L
00	F	-	-
5E	G	F'	L
00	Q	-	HIGH
3B	W	C	H
31	E	D	H
28	R	E	H
24	T	F	H
00	l	-	H
00	2	-	H
36	3	C'	H
2C	4	D'	H
00	5	-	H
00	0	-	H
00	9	-	H
0F	8	A'	H
16	7	G'	H
1E	6	F'	H
00	P	-	H
0A	O	C	H
0C	I	B	H
12	U	A	H
1A	Y	G	H
00	n1	-	LOW
00	L	-	-
41	K	-	L
00	J	-	L
AC	H	A'	L
00	sp	-	L
38	-	C'	L
3C	M	B	L
46	N	A	L
53	B	G	L

Vancouver Sinclair Users Group,
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The Vancouver Sinclair Users Group has been in existence since 1982. We are a support group for the owners and users of the, Microace, ZX 80, ZX 81, T/S 1000, T/S 1500, Spectrum, Spectrum+ T/S 2068 and QL computers.

Our 1985 executive consists of,
President Marcio Vieira
V.P./Coordinator Erik Sakara
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